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DECLINE OF THE UPLAND SANDPIPER (*BARTRAMIA LONGICAUDA*) IN OHIO: AN ENDANGERED SPECIES[1]

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ABSTRACT. The 1981 breeding range of upland sandpipers in Ohio shows a 62.0% decline from its historical range. Breeding populations have significantly decreased in numbers and in flock size since the 1920s. Airport habitats are preferred (74.4% of all individuals reported) over all other habitats and presumably represent critical optimal breeding areas. Proper management of airport habitats is encouraged in order to promote the recovery of this endangered species in Ohio.

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INTRODUCTION

Current breeding populations of the upland sandpiper (*Bartramia longicauda*) in the U.S. are very localized, and much of the breeding range has been reduced (Johnsgard 1981). These birds were abundant migrants and common summer residents in Ohio in the late 19th century (Wheaton 1882, Dawson 1903, Hicks 1935), numerous until the 1930s (Trautman and Trautman 1968, Kleen 1973), considered rare in the 1960s (Blincoe 1967) and endangered in the 1970s (Smith et al. 1973). The species was officially placed on Ohio's endangered species' list in 1976 (ODNR 1976).

The purpose of this report is to document the degree of decline of *Bartramia* breeding populations since 1880 in Ohio, to identify critical breeding habitats and to ascertain trends in flock structure.

METHODS

Data on historical and current distribution, locality (station), abundance, habitat use, and group size were collected in 1981 from records dating back to 1880 and from extensive personal communication with state ornithologists and Breeding Bird Census participants.

RESULTS AND DISCUSSION

Historically, *Bartramia* bred in 79 of 88 (79.7%) counties in Ohio (fig. 1). By 1981, breeding distribution was reduced to 30 (34.1%) counties, representing a 62.0% decline in *Bartramia's* former range. Current populations are widely scattered and non-contiguous. Breeding records were not reported for Highland and Warren counties until 1964 and 1966, respectively.

Adjacent states show similar patterns of decline. Once a common prairie resident in northern Indiana (Butler 1898), *Bartramia* is now considered very rare (Keller et al. 1979). Formerly abundant throughout Michigan, it decreased rapidly after 1900

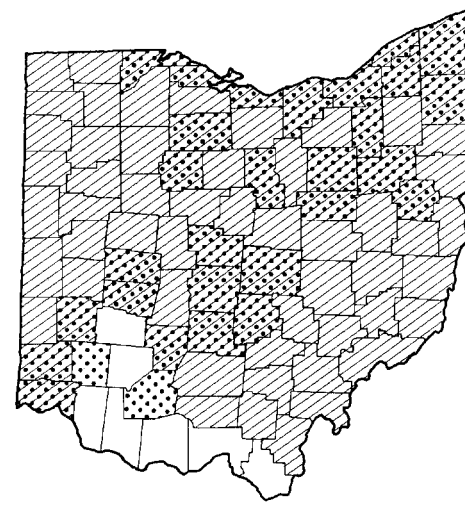

FIGURE 1. Breeding distribution of the upland sandpiper in Ohio, showing counties occupied in the 1930s (diagonal lines) and in 1981 (dotted areas).

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(Barrows 1912). Although many of the prairies have been eliminated in southern Michigan (Stearns and Lindsey 1977), localized populations may be holding their own (Wallace 1977). Recent Michigan reports show good numbers only in 13 widely separated counties (Powell 1981).

The present discontinuous distribution of the population suggests that *Bartramia* may now restrict its breeding to particular habitats. Results of our survey (table 1) show airports were utilized over all other habitats with respect to the number of individuals, stations and individuals per station. Of those records specifying breeding habitats utilized by *Bartramia,* 74.4% of the individuals were recorded at airports.

Upland sandpipers have been known to nest in a variety of grassland habitats. In a survey of nesting in North Dakota, Higgins (1975) found most nests in non-tilled uplands including pastures, whereas hayfields and idle fields accounted for the majority of nesting habitats in Wisconsin (Ailes 1980).

Reported *Bartramia* summer populations ranged from 2 to 25 individuals, and average flock size was 5.6 birds. However, pairs were reported more frequently than larger groups (fig. 2).

The numbers of individuals per station showed a significant ($p < 0.05$) decline since 1929 (fig. 3). Since 1950 there have been only 3–6 birds reported at each site.

Although breeding populations at airports were over twice as large as flocks breeding in other Ohio habitats (table 1), they did not appear to approach maximum densities (20 pairs/2.5 km^2) found in favorable habitats in North Dakota (Stewart and Kantrud 1972).

Several factors may account for declines in *Bartramia* populations. Adverse weather conditions during breeding may account for yearly fluctuations (Ailes 1980) but not long-term population declines. The decline of the upland sandpiper in North America near the turn of the century (Coues 1874, Forbush 1912) has been at-

TABLE 1

Habitat preferences of breeding upland sandpipers in Ohio (1880–1981). Numbers in parentheses are percentages.

Habitat Type	No. of Individuals	No. of Stations	Individuals per Station
Airport	151 (47.2)	21 (28.5)	7 (38.9)
Meadow	39 (12.2)	12 (16.2)	3 (16.7)
Marsh	10 (3.1)	6 (8.1)	2 (11.1)
Cultivated field	3 (0.9)	1 (1.3)	3 (16.7)
Unspecified	117 (36.6)	34 (45.9)	3 (16.6)
Totals	320 (100.0)	74 (100.0)	4 (100.0)

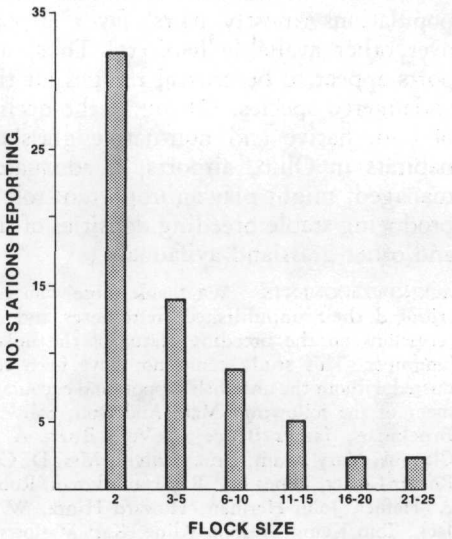

FIGURE 2. Distribution of flock sizes of summer populations of upland sandpipers in Ohio.

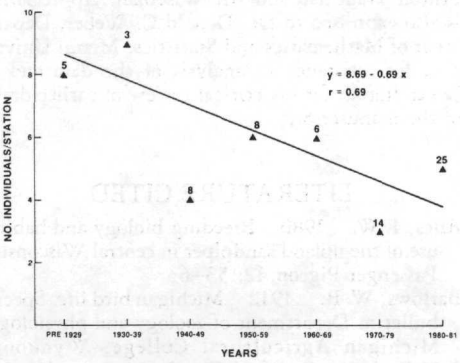

FIGURE 3. Population changes by decades of breeding upland sandpipers in Ohio. Numbers are the number of stations.

tributed to cultivation of the prairies and market hunting (Cooke 1914). Clearing of the forests and ending of legal hunting by the Migratory Bird Conservation Act of 1916, probably accounted for a modest increase of birds in Ohio during the early 1900s. More recently, however, intensive cultivation in Ohio has severely depressed the breeding population. Habitat changes on the wintering grounds in South America also cannot be ruled out.

Currently, upland sandpipers show a discontinuous distribution and a significant, steady decline since the 1920s. Small populations (mostly pairs) favor airports over other available habitats. Thus, airports appear to be critical refuges for this endangered species. Owing to the decline of both native and non-native grassland habitats in Ohio, airports, if adequately managed, might play an important role in producing stable breeding densities of this and other grassland avifauna.

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